Chapter 11

Transportation and Circulation

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Chapter 11
Transportation and Circulation

This chapter analyzes the proposed action's potential effects related to transportation. Activities enabled under the proposed action would take place primarily within PG&E's existing ROWs and adjacent areas; thus, the proposed action is not expected to affect airports or air traffic, mass transit, bicycles, pedestrians, or alternative transportation, and this chapter accordingly focuses on motor vehicle traffic. Effects on emergency vehicle access and emergency services' response times are discussed in Chapter 14 (*Public Health and Environmental Hazards*). Other related information is presented in Chapter 15 (*Recreation*).

Key sources of data used in the preparation of this chapter include the Transportation Research Board's *Highway Capacity Manual* (Transportation Research Board 2000). Additional specific reference information is provided in the text.

Affected Environment

Regulatory Context

Traffic analysis in the State of California is guided by standards set at the federal level by the Federal Highway Administration (FHWA), at the state level by the California Department of Transportation (Caltrans), and at the local level by local jurisdictions. Interstates fall under the jurisdiction of the FHWA, and state highways fall under the jurisdiction of Caltrans. Other roadways are under city or county jurisdiction, depending on whether they are located within city planning limits or on unincorporated county lands.

LOS or *level of service* is the primary measure used to describe the operating quality of a roadway facility. LOS is evaluated based on operational conditions within the traffic stream, including parameters such as speed and travel time, freedom to maneuver, traffic interruptions/delays, comfort, and convenience. LOS can be quantitatively estimated based on volume-to-capacity (V/C) ratio (the ratio between the number of vehicles actually traveling on a roadway and the number of vehicles it was designed to convey), or based on the average delay experienced by vehicles on the facility.

The *Highway Capacity Manual* (Transportation Research Board 2000) is the recognized source for the techniques used to measure transportation facility performance. Using the *Highway Capacity Manual*'s procedures, the quality of traffic operation is graded into one of six LOS designations: A, B, C, D, E, or F. LOS A represents the best range of operating conditions and LOS F represents the worst. Table 11-1 summarizes the characteristic traffic flow for each LOS designation.

Table 11-1. Volume to Capacity Ratio and Traffic Flow Conditions for Level of Service Designations

LOS	Approximate Maximum V/C	Description
A	0.3	Free-flow operations; vehicles unimpeded in ability to maneuver in traffic stream.
B	0.5	Reasonable free-flow conditions; only slightly restricted ability to maneuver.
C	0.7	Flows still near free-flow speed but noticeably restricted ability to maneuver.
D	0.9	Speeds begin to decline; maneuverability limited and queues begin to form.
E	1.0	Operation at capacity of roadway; maneuverability extremely limited and queues form with any disruption.
F	>1.0	Failure conditions indicating breakdowns in vehicular flow with long queues forming at breakdown points.

Source: California Department of Transportation 1999.

California Government Code 65300 requires each local government to include a circulation element as part of its general plan. The circulation element must address the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, and must be correlated with the land use element of the plan (California Government Code 65300).

As part of its planning process, each local jurisdiction establishes an LOS standard for the roadway facilities under its authority. This defines the minimum acceptable roadway operating conditions and allows deficiencies to be identified. To the extent feasible, transportation planning policies generally aim to ensure that facilities and services will be able to provide the minimum LOS for all planned land uses. This process requires jurisdictions to balance the following key factors.

- Long-term land development policies and community development standards.
- Adopted LOS standards.
- Financial policies and strategies, which determine available revenues and realistic levels of expenditure.

Any segment of roadway that operates at an LOS below the standard is considered a deficiency in the roadway system. Identified deficiencies often provide the basis for prioritizing improvement projects under capital improvement programs.

Existing Conditions

The action area encompasses part or all of nine San Joaquin Valley counties: San Joaquin, Stanislaus, Merced, Fresno, Kings, Kern, Mariposa, Madera, and Tulare (Figure 1-1). The action area is largely rural, with several major centralized urban areas and smaller areas of development scattered throughout.[1] Figure 11-1 represents existing county highways and the portion of the state highway system that occurs in the action area. In addition to state and county highways, each local jurisdiction has an extensive network of local roadways. Figure 11-1 also indicates the general distribution of development in the action area.

Environmental Consequences and Mitigation Strategies

Methodology for Impact Analysis

Impacts were evaluated qualitatively, based on professional judgment in light of the activities, methods, and techniques entailed by PG&E's San Joaquin Valley O&M program, and the additional avoidance and minimization measures (AMMs) that would be enacted under the proposed HCP. See Chapter 2 (*Proposed Action and Alternatives*). Because the proposed action would not enable any activities expected to affect airports or air traffic, mass transit, bicycles, pedestrians, or alternative transportation, analysis focused on motor vehicle traffic. Analysis assumed implementation of the additional environmental commitments enacted under this EIS/EIR, as described in Chapter 2.

PG&E's ongoing O&M program (which includes operation, maintenance, and minor construction activities) would not differ between the proposed action, Alternative 1 (HCP with Reduced Take), Alternative 2 (HCP with Enhanced Compensation), Alternative 3 (HCP with Reduced Number of Covered Species), and Alternative 4 (No Action). The principal features expected to differentiate traffic impacts between the proposed action and alternatives are the establishment of preserves and allowed uses on the preserves (e.g., limited passive recreation). Because actual traffic effects would vary depending on site-specific constraints,

[1] See Chapter 3 (*Land Use and Planning*) for additional information regarding land uses in the action area.

potential traffic impacts are of necessity discussed qualitatively, at a program level of detail.

Significance Criteria

For the purposes of this analysis, an impact was considered to be significant and to require mitigation if it would result in any of the following.

- Substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system.
- Exceedance of an established LOS standard for designated roads or highways.
- Safety hazards due to design features or incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit) or inadequate emergency access.
- Inadequate parking capacity.
- Conflict with adopted transportation plans, programs, or projects.

Impacts and Mitigation Measures

Proposed Action

Impact TR1—Potential to result in temporary construction-related traffic increases and traffic safety hazards (O&M, minor construction, and preserve enhancements). Minor, temporary traffic increases would result from construction associated with O&M activities (including expansion or upgrades of existing facilities, construction of new facilities, pipeline lowering, and replacement of various system components); construction of associated roadways; and preserve enhancements. Increases in traffic would occur mainly as a result of construction worker commute trips and transport of construction materials and equipment.

Construction related to O&M activities and preserve enhancements is unlikely to produce large traffic increases because of the nature of the projects involved. O&M activities are typically small and short-term, and require at most a few vehicles and staff. Preserve enhancement activities would likely also focus on relatively small geographic areas and would not entail a prolonged construction window or require large numbers of workers. O&M and preserve enhancement projects are also expected to have comparatively small delivery and haulage requirements because of their small scale and short duration.

Some types of minor construction activities could require a longer construction window (months instead of days) and a larger number of workers, and result in a larger number of haulage and delivery trips. Because specific O&M sites,

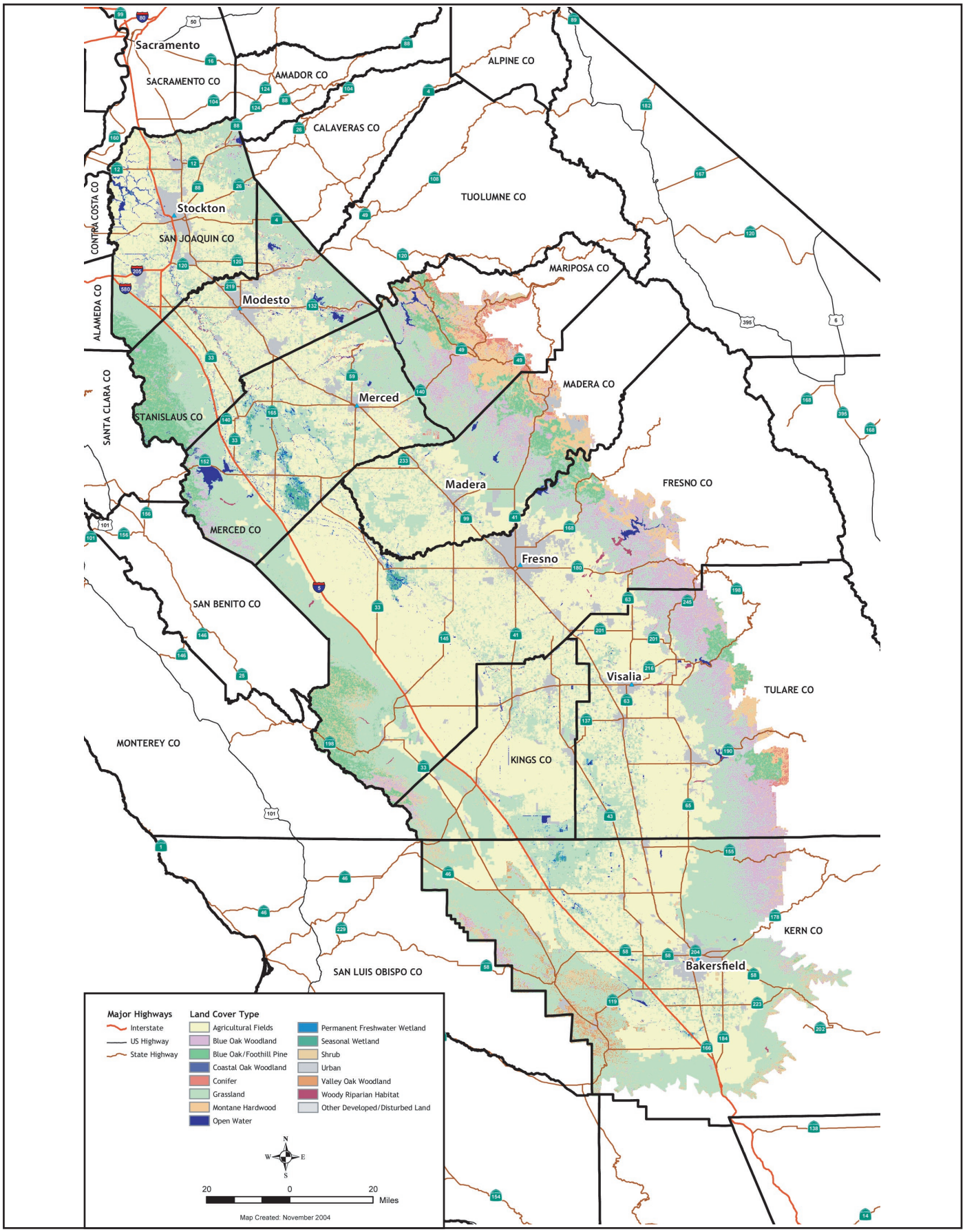

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Figure 11-1
US, State, and Interstate Highways in the Action Area

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locations of new facilities, and locations of habitat requiring enhancement (if any) cannot be foreseen at this time, it is not possible to identify specific roadways and intersections likely to be affected by traffic related to these activities. However, it is possible to make some general inferences about possible effects. For example, increased traffic volume could create traffic delays and/or roadway safety concerns. Movement of large, slow construction equipment or vehicles could also result in delays and safety hazards, particularly at ingress points where these vehicles enter the traffic stream. Delays could also occur as a result of lane closures that reduce carrying capacity for a portion of the roadway, and full roadway closures would necessitate detours around construction areas.

Based on this general assessment, some O&M/construction/enhancement activities could adversely affect traffic flow, generate traffic in excess of established LOS standards, or result in traffic safety hazards. Many of the off-highway roadways in the action area are rural in nature, with narrow lanes or a minimal number of lanes. Even a small number of construction traffic trips on such roadways could adversely affect traffic flow; heavy, slow-moving construction equipment could be a particular concern in this situation. Similarly, in rapidly expanding urban/suburban areas, where traffic congestion is a prime concern, additional traffic including heavy equipment and/or truck traffic would be a concern for traffic flow.

To address potential adverse effects on traffic flow and safety, PG&E is committed to a range of industry-standard BMPs to reduce effects of construction trip generation on traffic flow and safety (see Chapter 2). These include

- providing through access for emergency vehicles or notifying emergency service providers in advance of any needed lane or route closures;
- maintaining access for private roads;
- providing adequate off-road parking and staging for vehicles, equipment, and materials throughout the work period;
- restricting all construction parking and staging to right-of-way (ROW) and pre-approved staging areas, and keeping construction equipment in designated staging areas when not in use;
- posting construction warning signs in advance of the construction area and at intersections that provide access to the construction area;
- restricting all non-emergency construction traffic, including haul and delivery trucks, to normal daytime business hours, unless a local jurisdiction identifies a need for off-hours routing to avoid impacts on peak-hour commute traffic; and
- avoiding key commute routes and “rate-limiting” intersections during peak traffic periods, and working with local jurisdictions to identify the routes and intersections that should be avoided, and appropriate alternate travel routes or times.

PG&E will also be required to operate vehicles in accordance with the terms of Caltrans encroachment permits where activities occur in Caltrans ROW. Finally, the larger-scale activities that pose the greatest concern for traffic flow are expected to occur infrequently (see HCP Table 3-1 in Appendix B of this EIS/EIR).

In summary, because traffic increases associated with most O&M, minor construction, and preserve enhancement activities would be comparatively small and of short duration, and in view of the traffic control commitments in place, activities enabled by the proposed action are not expected to result in a substantial increase in traffic or significant traffic safety hazards. Traffic effects of infrequent larger-scale activities would also be offset by PG&E's traffic control measures. **This impact is thus considered less than significant.**

Mitigation Measure—No mitigation is required.

Impact TR2—Potential long-term traffic increases and traffic safety hazards due to O&M activities and staffing at new facilities. Most new or expanded facilities would not require full-time staffing. Those that would need attendance (primarily new substations) would require only a few (less than 5–10) new full-time employees. Patrol and maintenance of new and expanded facilities would be added onto existing trips—the extent of facilities involved would be slightly greater, but the overall number of trips is not expected to increase substantially over the permit term, and new patrol and maintenance work would be covered by the same traffic commitments described in Chapter 2 and Impact TR1 above. Ongoing O&M activities at new or expanded facilities would result in very minor increases in traffic, and would continue to be covered by the same commitments to minimize impacts on traffic flow already in place (see Chapter 2 and above). Consequently, **this impact is expected to be less than significant.**

Mitigation Measure—No mitigation is required.

Impact TR3—Potential long-term traffic increases and traffic safety hazards due to activities at preserves. Management and very limited recreational use of new preserves established as habitat compensation under the proposed action are unlikely generate significant increases in traffic or result in additional traffic safety hazards.

The preserves would not require full-time staffing and would therefore not result in long-term daily traffic increases related to staff commute trips. However, preserve management activities (including site inspections and surveys, maintenance activities and minor repairs, and vegetation management) would periodically generate a small number of trips for example, biological surveys would take place once per year and some types of maintenance could occur seasonally). However, trip generation would be small enough that it is not expected to alter LOS, to create safety hazards, or to require reconfiguration of existing public roadways.

Some preserves may allow passive recreational activities such as birdwatching (see additional discussion in Chapter 15), which would generate new vehicle trips to and from preserves as recreationists access preserves. However, non-management activities at the preserves would be very rare and strictly regulated; recreational activities on preserves are expected to be strictly limited in the interest of maintaining relatively undisturbed conditions and preserving quality wildlife habitat. Due to the limited nature of these activities, recreation-related traffic is not expected to substantially increase or generate traffic in excess of established LOS standards. As described in Chapter 2 *(Proposed Action and Alternatives)*, PG&E has committed to consulting with local jurisdictions and appropriate transportation agencies and/or authorities to ensure that management and limited recreational use of preserves does not adversely affect traffic flow or safety. As part of this dialogue, it is anticipated that recreational activities with the potential to degrade LOS would be prohibited until or unless local roadway infrastructure is upgraded or the LOS standard is adjusted to reflect new uses. Consequently, management and use of preserves is not expected to result in long-term degradation of LOS on area roadways, or to create long-term safety hazards. **This impact is thus considered less than significant.**

Mitigation Measure—No mitigation is required.

Impact TR4—Potential to result in inadequate parking capacity. O&M and—particularly—minor construction activities enabled under the proposed action would create a temporary need for parking to accommodate construction crews, as well as staging areas for construction equipment and supplies. As described in Chapter 2, PG&E has committed to ensure that adequate construction parking and staging areas are identified outside existing public roadways, so construction is not expected to have an adverse effect on traffic flow or on regional parking demand; work crews will be accommodated and staging sites will be selected to avoid displacing a substantial amount of parking in existing designated parking areas.

The parking and staging commitments identified in Chapter 2 of this EIS/EIR also include a long-term commitment to ensure that adequate parking is provided for new facilities, and for management and recreational uses at preserves. Note that recreational use is expected to require little additional parking beyond what is needed to support preserve management, because recreational use at the preserves would be very limited and strictly regulated.

Thus, activities enabled by the proposed action are not expected to result in excess parking demand or inadequate parking capacity. **This impact is considered less than significant.**

Mitigation Measure—No mitigation is required.

Impact TR5—Potential conflicts with transportation plans, programs, and planned projects. Establishment of preserves and acquisition of new ROWs could result in conflicts with future transportation projects. Establishment of preserves and acquisition of new ROWs in or adjacent to areas where land may

be required for transportation ROWs could impair construction of these projects; transportation projects could also limit the suitability of nearby areas as resource preserves due to the incompatibility of many types of transportation corridors with habitat conservation and enhancement.

As discussed in Chapter 2, PG&E intends to consult with local, state, and federal transportation agencies to identify the location of planned transportation projects within the action area. Lands within or adjacent to proposed transportation ROWs would be acquired for compensation use only when adequate AMMs could be provided to ensure that the transportation project could be constructed without adversely affecting achievement of the proposed HCP's conservation goals. Potential conflicts with future transportation projects would thus be minimized through the consultative planning process between PG&E and the appropriate transportation agencies. **This impact is considered less than significant.**

Mitigation Measure—No mitigation is required

Alternative 1—HCP with Reduced Take

Alternative 1 would enable the same program of O&M and minor construction activities described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 1 would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR for the proposed action, and compensation ratios for loss or disturbance of habitat would be the same as under the proposed action.

The key difference between the proposed action and Alternative 1 is an additional level of stringency associated with the implementation of AMMs at a lower level of effect than under the proposed action, with the intent of reducing take. As discussed in Chapter 2 (*Proposed Action and Alternatives*), the AMMs implemented under Alternative 1 would be the same as those described above for the proposed HCP. However, under Alternative 1, AMMs for certain activities would be implemented at a lower level of disturbance. Although the level of take would be reduced because of the increased stringency associated with implementation of the AMMs, compensation is expected to be similar under both alternatives because compensation acreages would be calculated based on acreage affected, not on level of take. Consequently, under Alternative 1, impacts on traffic would be similar to those described for the proposed action.

Alternative 2—HCP with Enhanced Compensation

Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 2 would enact the same additional environmental commitments for other resource

areas identified in this EIS/EIR for the proposed action. Differences between Alternative 2 and the proposed action center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action).

Under Alternative 2, assuming the same level of habitat disturbance, overall compensation needs would likely be greater than under the proposed action. Thus, as identified in Chapter 3 (*Land Use and Planning*), Alternative 3 would probably result in the establishment of a greater number of preserves, or preserves that encompass larger geographic areas, compared to the proposed action.

Criteria for identifying suitable compensation lands would remain the same under Alternative 2, and selection of appropriate compensation lands would be subject to the same USFWS and DFG approval process. Thus, as the demand for compensation lands increases, availability of lands that support the appropriate habitat types would decrease, both within and outside of PG&E ROWs. Where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would still be available (e.g., purchase of mitigation credits, donations, and enhancement), and might be used to a greater extent; reliance on compensation options other than acquisition by purchase or easement might offset some of the difference in compensation ratios. However, Alternative 2's enhanced compensation requirements would probably still result in greater overall compensation requirements and hence a greater number and/or larger acreage of preserves. Thus, impacts on traffic under Alternative 2 would be similar to but somewhat greater than those described for the proposed action.

Alternative 3—HCP with Reduced Number of Covered Species

Alternative 3 would enable the same program of O&M and minor construction activities described for the proposed action, and would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR. The key difference between Alternative 3 and the proposed action relates to the number of species covered under Alternative 3 (reduced by comparison with the proposed action, as described in Chapter 2). Reducing the number of covered species could result in the establishment of a smaller number of preserves or preserves that encompass smaller geographic areas by comparison with the proposed action. At the same time, separate, case-by-case consultation for level of effect and compensation needs could be necessary for noncovered species, depending on the species potentially affected, and their status at the time of the proposed activity.

It is difficult to determine the precise effect that this approach would have on traffic since locations and other details about specific compensation lands are unknown at this time. However, because some compensation requirements might

be assessed on a case-by-case basis, Alternative 3 would have the potential to result in a greater number of smaller preserve areas, potentially requiring slightly increased management-related trips while distributing traffic effects related to use and management of preserves over a greater area. In summary, impacts on traffic would likely be similar under Alternative 3 to those described for the proposed action, but could be somewhat greater overall.

Alternative 4—No Action

Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new or additional environmental commitments would be put in place.

Individual actions affecting suitable habitat for listed special-status species would be assessed through case-by-case consultation with USFWS and DFG for level of effect and compensation needs. Because the compensation requirements for habitat disturbance would be assessed on a case-by-case basis, smaller parcels of land would likely be identified for enhancement at any given time; case-by-case assessment could also result in the establishment of a greater number of preserves. This is similar to but more extreme than the case described above for Alternative 3, where most compensation would likely occur under the auspices of an HCP process.

The availability of desirable compensation lands is expected to decrease over time, as lands are used for compensation or other purposes. However, as described for the action alternatives, where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would likely still be available (e.g., purchase of mitigation credits, donations, and enhancement), and might be used to a greater extent.

It is difficult to determine the precise effect that this approach would have on traffic since locations and other details about specific compensation lands are unknown at this time. However, since the resulting compensation requirements would be assessed on a case-by-case basis, Alternative 4 could result in a greater number of smaller contiguous preserve areas, requiring more management-related trips but distributing traffic effects over a wider area. Thus, impacts on traffic would likely be similar under the No Action Alternative to those described for the proposed action, but could be somewhat greater overall.

References Cited in this Chapter

California Department of Transportation. 1999. *Initial Study/Environmental Assessment—Safety Improvement Project on State Route 152 in Santa Clara County*. District 4, Office of Environmental Planning, South.

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